Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

Listing of Claims

1. (Currently Amended) A method for detecting occult blood in a specimen comprising:

(a) treating the specimen with a reacting solution comprising a strong reducing agent; ~~wherein the strong reducing agent reduces porphyrin to a porphyrin-like product~~; and

(b) monitoring the treated specimen for ~~the~~ fluorescence ~~of the porphyrin-like product in the treated specimen~~, wherein fluorescence ~~of the porphyrin-like product~~ indicates the presence of occult blood.

2. (Original) A method of claim 1, wherein the strong reducing agent is sodium borohydride.

3. (Original) A method of claim 2, wherein the reacting solution is made up of approximately 0.1 percent to approximately 4 percent sodium borohydride.

4. (Original) A method of claim 2, wherein the reacting solution is made up of approximately 0.2 percent sodium borohydride.

5. (Original) A method of claim 1, wherein the reacting solution is comprised primarily of phosphate buffered saline (PBS).

6. (Currently Amended) A method of claim 1, wherein the specimen is a biological specimen selected from the group consisting of feces, urine, cerebral spinal fluid, plural cavity fluid, thoracic cavity fluid~~, or~~ and cerebral fluid.

7. (Currently Amended) A method of claim 1, wherein the fluorescence ~~of the porphyrin-like product~~ is monitored by a fluorescent spectrometer or a fluorescent microscope.

8. (Currently Amended) A method of claim 1, wherein the treated specimen ~~porphyrin-like product~~ fluoresces with a spectrum from about 530 to about 670 nm when excited at about 480 nm.

9. (Original) A method for detecting one or more erythrocytes in a specimen, wherein the method comprises:
(a) treating the specimen with a strong reducing agent effective to enhance the fluorescence of any erythrocyte present in the specimen; and
(b) monitoring the fluorescence emitted by the treated specimen, wherein fluorescence of one or more erythrocytes in the treated specimen indicates the presence of erythrocytes.

10. (Currently Amended) A method of claim 9, wherein the specimen is a biological specimen selected from the group consisting of feces, urine, cerebral spinal fluid, plural cavity fluid, thoracic cavity fluid~~, or~~ and cerebral fluid.

11. (Original) A method of claim 9, wherein the erythrocytes are monitored by a fluorescent microscope.

12. (Currently Amended) A method for quantifying the amount of occult blood in a specimen comprising:

(a) exposing the specimen to a reacting solution comprising a strong reducing agent ~~wherein the strong reducing agent reduces porphyrin to a porphyrin-like product;~~ and
(b) monitoring the treated specimen for ~~the~~ fluorescence ~~of a porphyrin-like product in the treated specimen~~, wherein fluorescence ~~of the porphyrin-like product~~ indicates the amount of occult blood present in the specimen.

13. (Currently Amended) A method of claim 1 wherein the specimen is ~~comprising detecting fecal occult blood in~~ a fecal specimen, the method further comprising, prior to step (a), ~~by:~~
~~(a)~~ purifying the fecal specimen to substantially remove all materials that will interfere with measuring the fluorescence ~~properties~~ of the fecal specimen;
~~(b) treating the purified fecal specimen with a reacting solution comprising a strong reducing agent, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product; and~~
~~(c) monitoring for the fluorescence of a porphyrin-like product in the treated specimen, where fluorescence of the porphyrin-like product indicates the presence of occult blood in the fecal specimen~~.

14. (Currently Amended) A test kit comprising a reacting solution comprising a strong reducing agent and directions for treating a specimen with the reacting solution, wherein ~~the reacting solution is used to treat a specimen and the strong reducing agent reduces porphyrin to a porphyrin-like product, and wherein monitoring the~~ fluorescence of the ~~porphyrin-like product in the~~ treated specimen is indicative of the presence of occult blood in the specimen.

15. (Original) A kit of claim 14, wherein the strong reducing agent is sodium borohydride.

16. (Original) A kit of claim 15, wherein the reacting solution is made up of approximately 0.1 percent to approximately 4 percent sodium borohydride.

17. (Original) A kit of claim 15, wherein the reacting solution is made up of approximately 0.2 percent sodium borohydride.

18. (Original) A kit of claim 15, wherein the reacting solution is comprised primarily of phosphate buffered saline (PBS).

19. (Currently Amended) A kit of claim 15, wherein the kit comprises containers for collecting and/or storing a ~~the~~ specimen ~~is a biological specimen selected from the group consisting of feces, urine, cerebral spinal fluid, plural cavity fluid, thoracic cavity fluid, or cerebral fluid~~.

20. (Cancelled)

21. (Cancelled)

22. (Currently Amended) A kit of claim 14, wherein the kit comprises (1) directions for gathering biological samples and specimens ~~such as feces, urine, cerebral spinal fluid, fluid from the plural cavity, cerebral fluid, and other body fluids or excretions~~; and (2) protocols for analyzing whether those samples and specimens contain occult blood, and if so, the amount of occult blood present in each positive sample.

23. (Original) A kit of claim 14, wherein the kit is designed to detect fecal occult blood and includes reagents and containers necessary for collecting and purifying a fecal specimen.

24. (Original) A kit of claim 14, wherein the kit comprises distinct containers for individual reagents and containers for collecting and/or storing biological samples and specimens.

25. (Original) A kit of claim 24, wherein each reagent is aliquoted in an individual container.

26. (Currently Amended) A method comprising determining whether a subject is at risk of developing, or suffers from, a disease associated with occult blood by:
(a) treating a specimen obtained from the subject with a reacting solution comprising a strong reducing agent~~, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product~~; and
(b) monitoring the treated specimen for ~~the~~ fluorescence ~~of the porphyrin-like product in the treated specimen~~, wherein fluorescence ~~of the porphyrin-like product~~ indicates the presence of occult blood and the likelihood that the subject may develop or has developed the disease.

27. (Original) A method claim of 26, wherein the disease is gastrointestinal tumors, kidney tumors, bladder tumors, lung cancer, thoracic wall cancer, or parasite infestation and the subject is a human.

28. (Original) A method of claim 26, wherein the specimen is a biological specimen selected from the group consisting of feces, urine, cerebral spinal fluid, plural cavity fluid, thoracic cavity fluid and cerebral fluid.

29. (Currently Amended) A method ~~comprising~~ for determining the extent and spatial distribution of erythrocytes trapped in cerebral tissues microvasculature comprising ~~by~~:
(a) treating cerebral tissue microvasculature with a reacting solution comprising a strong reducing agent~~, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product~~; and
(b) monitoring the treated tissue for ~~the~~ fluorescence ~~of a porphyrin-like product in the treated tissue~~; wherein the fluorescence ~~of the porphyrin-like product~~ indicates the extent and spatial distribution of erythrocytes trapped in cerebral tissue microvasculature.

30. (Currently Amended) A method of claim 29 ~~30~~, wherein the vasculature is flushed with heparinized saline by cardiac perfusion to remove erythrocytes from functional post-ischemic brain microcirculation prior to treatment with the reacting solution.

31. (Currently Amended) A test kit comprising a reacting solution comprising a strong reducing agent~~, wherein the reacting solution is used to treat~~ and directions for treating cerebral tissue microvasculature with the reacting solution, ~~and the strong reducing agent reduces porphyrin to a porphyrin-like product, and~~ wherein ~~monitoring the~~ fluorescence of ~~the porphyrin-like product in~~ the cerebral tissue microvasculature is indicative of the extent and spatial distribution of erythrocytes trapped in cerebral tissue microvasculature.

32. (Currently Amended) A method for ~~comprising~~ determining whether a subject is at risk of developing, or suffers from, cerebral vascular trauma or bleeding, the method comprising ~~by~~:
(a) treating cerebral tissue microvasculature in situ or ex vivo with a reacting solution comprising a strong reducing agent~~, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product~~; and
(c) monitoring the treated tissue for ~~the~~ fluorescence ~~of a porphyrin-like product in the treated tissue~~; wherein the fluorescence ~~of the porphyrin-like product~~ indicates the extent and spatial distribution of erythrocytes trapped in cerebral tissue microvasculature which is indicative of the likelihood that the subject may develop or has developed the disease.

33. (Currently Amended) A method of detecting the presence or past existence of erythrocytes in a specimen or sample comprising:
(a) treating the specimen or sample with a reacting solution comprising a strong reducing agent~~, wherein the strong reducing agent reduces porphyrin to a porphyrin-like product~~; and

(b) monitoring the treated specimen or sample for ~~the~~ fluorescence ~~of the porphyrin-like product in the treated specimen or sample~~, wherein fluorescence ~~of the porphyrin-like product~~ indicates the presence of erythrocytes.

34. (Currently Amended) A test kit comprising a reacting solution comprising a strong reducing agent and directions for treating~~, wherein the reacting solution is used to treat~~ a known or suspected blood sample with the reacting solution, ~~and the strong reducing agent reduces porphyrin to a porphyrin-like product, and~~ wherein ~~monitoring the~~ fluorescence of ~~the porphyrin-like product in~~ the treated sample is indicative of the presence of erythrocytes in the sample.

35. (New) A method of claim 1, wherein the strong reducing agent is selected from the group consisting of sodium borohydride, potassium borohydride, calcium borohydride, copper borohydride, ammonium borohydride, benxyltriethylammonium borohydride, benzyl-triphenylphosphonium borohydride, bis (triphenylphosphine)copper(I) borohydride, cetyl-trimethylammonium borohydride, lithium borohydride, methytrioctylammonium borohydride, tetramethylammonium borohydride, tetrabutylammonium borohydride, tetraethylammonium borohydride, lithium aluminum hydride, diborane and 9-BBN, Dihydrogen, The Grignard Reagent, dialkylcopper lithium (lithium dialkylcuprate) reagents, sodium, alkyl sodium, and alkyl lithium.